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ON SOME NEW GENERA AND SPECIES OF NEOTROPICAL DRYOPOIDEA (COLEOPTERA)

By H. E. Hinton, Ph.D.

(*Junior Curator, University Museum of Zoology, Cambridge.*)

With 54 Text-figures.

(Read 1st March, 1939.)

In this paper three new genera and ten new species belonging to the families Limnichidae, Dryopidae, and Elmidae are described. In addition, one species of Limnichid is re-described.

For text-figures 1 and 19 I am indebted to Miss O. F. Tassart. All other illustrations were made by me with the aid of a camera lucida. Lines next to illustrations refer to a length of 0·20 mm. The descriptions of the various species were drawn up under magnifications of × 75 and × 150.

Limnichidae.

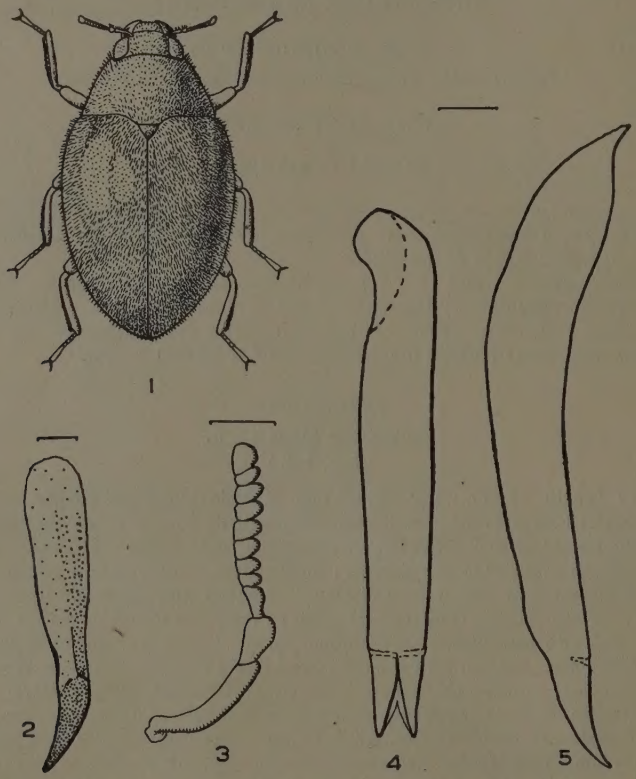
Lutrochus gigas sp. n.

(figs. 1–5.)

Male: Length, 6·2 mm.; breadth, 3·3 mm. Cuticle shining and piceous; antennae, mouth-parts, tibiae, and tarsi rufo-piceous. *Head* with irregular to round punctures which are usually about 0·02 mm. broad but are occasionally only a fourth as coarse as this and are confluent to separated by one diameter; middle of head with punctures usually slightly finer and separated by one to three diameters. Clypeus with the fronto-clypeal suture obsolete; anterior margin truncate, and angle on each side rounded; surface minutely rugulose and with punctures about 0·010 mm. broad, usually confluent to separated by one-half diameter. Labrum with anterior margin feebly rounded, and angle on each side broadly rounded; surface sculptured as clypeus except for apical fourth at middle which is nearly smooth; each side anteriorly with a prominent tuft of dense, long, fine, golden hairs. *Pronotum* at broadest point, which is just before base, broader than long (2·57 mm. : 1·52 mm.), base broader than apex (2·50 mm. : 1·37 mm.). Surface with round to irregular punctures which vary from 0·04 mm. to 0·012 mm., though usually about 0·025 mm. broad; these punctures are usually separated by one diameter, but are very rarely confluent. *Elytra* three times as long as pronotum (4·5 mm. : 1·5 mm.). Surface without striae and punctate like pronotum but very slightly more coarsely so. *Scutellum* flat, triangular, and slightly broader than long (0·30 mm. : 0·27 mm.); surface with punctures similar to finest of pronotum and confluent to separated by one diameter. *Prosternum* with narrow (0·025 mm.) median longitudinal callosity on basal two-thirds of process; process with apex feebly rounded. Surface of process on basal two-thirds punctate as elytra but a little more densely and deeply so; declivous apical third of process with only minute (0·007 mm. broad) punctures which are separated by one or less than one diameter; surface of prosternum punctate as elytra but at sides feebly rugulose and with fine punctures nearly completely replacing the coarser ones. Hypomera punctate as sides of prosternum but on anterior half with about 10 large (0·050 mm. broad) punctures which are confluent to

separated by half their diameter. Mesosternum with punctures similar to those of pronotum but about one-fourth finer. Metasternum with median longitudinal line shallow and narrow but complete. Abdomen with punctures usually about 0·025 mm. broad, though occasionally much finer, and usually confluent to separated by half their diameter. *Legs* with middle tibiae only sparsely pubescent. *Genitalia* as in figs. 3–4.

Female : Externally similar to male.



FIGS. 1–5.—*Lutrochus gigas* sp. n. (1) Dorsal view. (2) Lateral view of female genitalia. (3) Antenna. (4) Dorsal view of male genitalia. (5) Right lateral view of male genitalia.

Type : ♂. In the collection of the Deutsches Entomologisches Institut, Berlin-Dahlem. PERU : Vilcanota (Coll. *Kraatz*).

Paratypes : Collected in the same locality as the type, 1 ♂, 2 ♀♀.

Comparative notes : This species is nearest to *L. germari* Grouv. from which it may be distinguished by its larger size (4·5 mm.–5·0 mm. : 6·0 mm.–6·2 mm.) and differently formed male genitalia.

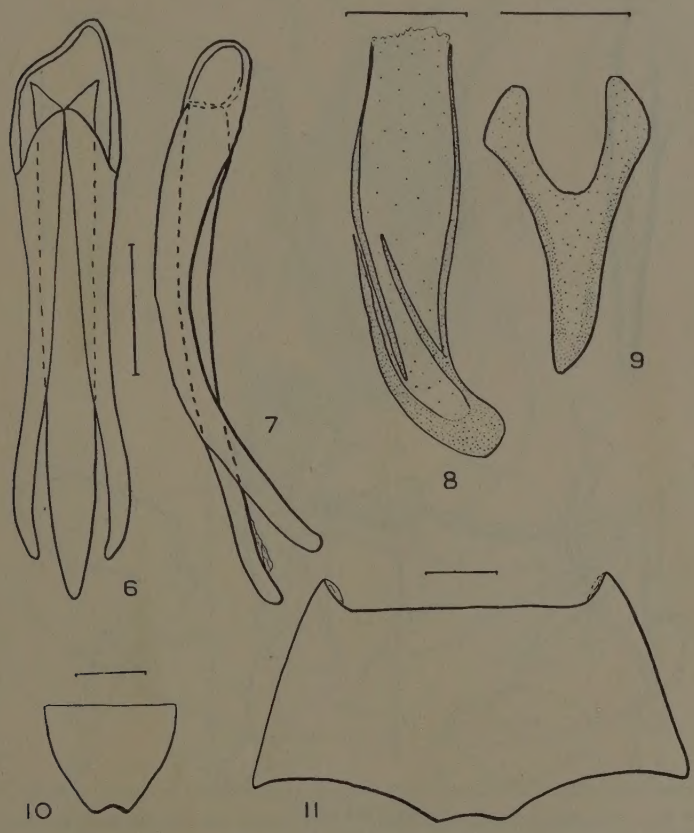
I have seen examples of this species in the Paris and British Museums labelled *L. gigas* Grouv., but I have been unable to find any published record of this name.

Ersachus erichsonianus Sharp.

(figs. 6–20.)

1902. *Ersachus erichsonianus* Sharp, *Biol. Centr.-Amer. Col.* **2** (1) : 683, t. 20, f. 6.

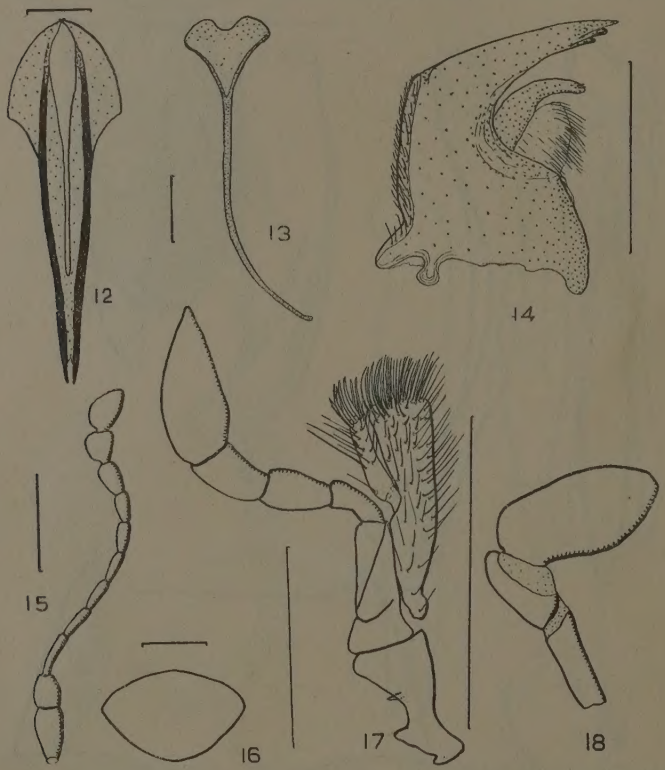
Male : Length, 2·6 mm.; breadth, 1·3 mm. Cuticle moderately shining, rufo-piceous; antennae, mouth-parts, tibiae, and tarsi usually brownish-testaceous; all of head and many large oval areas on pronotum and elytra with golden-testaceous hairs which on these patches



FIGS. 6–11.—*Ersachus erichsonianus* Sharp. (6) Dorsal view of male genitalia. (7) Right lateral view of male genitalia. (8) Spicule. (9) Sixth sternite of male. (10) Apical tergite of male. (11) Outline of pronotum.

nearly completely replace the usual brownish hairs; ventral surface for most part with golden-testaceous hairs. *Head* without distinct impressions; surface with deep, usually round punctures which are at least one-third coarser than facets of eyes, or about 0·021 mm. broad, and usually separated by one-fourth to one diameter; surface between punctures minutely alutaceous, with an occasional microscopic puncture. Clypeus with fronto-clypeal suture very deep and distinct and so shaped that anterior margin of the head is broadly arcuate; anterior margin feebly and arcuately emarginate for its entire breadth,

and angle on each side broadly rounded; surface sculptured as head but slightly more densely. Labrum with anterior margin truncate and angle on each side broadly rounded; surface sculptured like that of clypeus; on each side anteriorly is a large tuft of dense, long, fine, golden-testaceous hairs. *Pronotum* across broadest point, which is at base nearly twice as broad as long (1·15 mm. : 0·60 mm.), base broader than apex (1·15 mm. : 0·65 mm.). Pronotum shaped as in fig. 11. Surface punctate as that of clypeus. *Elytra* more than three times as long as pronotum (2·05 mm. : 0·60 mm.). Surface without

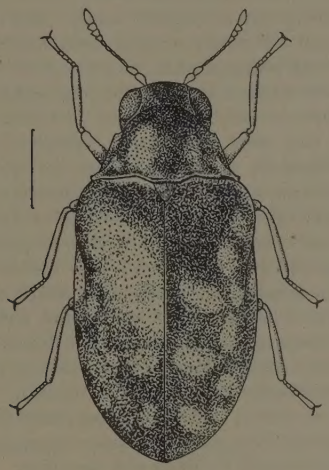


FIGS. 12–18.—*Ersachus erichsonianus* Sharp. (12) Dorsal view of female genitalia. (13) Sixth sternite of female. (14) Mandible. (15) Antenna. (16) Apical tergite of female. (17) Maxilla. (18) Labial palp.

trace of striae and punctate as clypeus but with punctures slightly larger (0·027 mm. broad), feebly oblong, and usually separated by their own length. *Scutellum* flat, triangular, as broad as long (0·185 mm.); surface sculptured as on adjacent parts of elytra but with punctures slightly finer and round instead of feebly oblong. *Prosternum* with apex of process acute; surface with round and deep punctures about as coarse as those of elytra but confluent to separated by half their diameter. Hypomera punctate like pronotum. Mesosternum sculptured like pronotum but with punctures finer and much less distinct. Metasternum with median longitudinal line attaining anterior fifth; surface of disk punctate

like that of pronotum but slightly more densely so, while surface of sides is punctate like that of elytra but with punctures round and slightly denser, being seldom separated by as much as their diameter. Abdomen similarly punctate but very slightly more densely than metasternal disk. *Genitalia* as in figs. 6–7.

Female : Externally similar to male but with apical abdominal tergite differently shaped (*vide* figs. 10 and 16).



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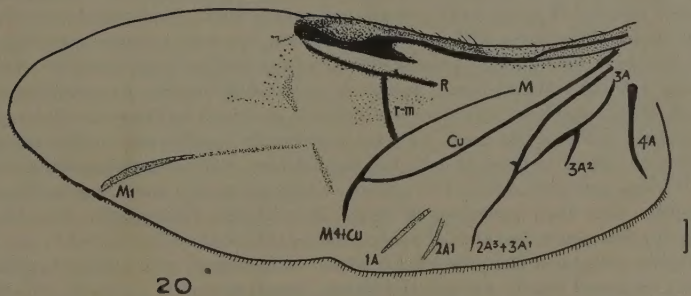

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FIGS. 19–20.—*Ersachus erichsonianus* Sharp. (19) Dorsal view. (20) Hind-wing. Venation after Forbes.

Type : In the collection of the British Museum (Natural History). GUATEMALA : Vera Paz, San Geronimo (*Champion*).

Specimens examined : 13, with same data as type; 1, GUATEMALA : Zapote (*Champion*). 1, PANAMA : Caldera (*Champion*). 1, MEXICO : Jalapa (*Flohr*). 12, MEXICO : Dist. de Temascaltepec, Temascaltepec, alt. about 5600 ft., vii.1934 (*H. E. Hinton*).

Comparative notes : This species may be immediately distinguished from *E. mexicanus* Sharp by the moderately convex instead of strongly gibbous anterior half of the pronotum.

Dryopidae.

Helichus bollowi sp. n.

Male : Length, 7–8·5 mm.; breadth, 2·7–3·0 mm. Cuticle shining, dark rufo-piceous to black; antennae, mouth-parts, and legs paler rufo-piceous. *Head* without distinct impressions; surface with two sizes of round punctures as follows : (1) coarse punctures as coarse as facets of eyes (0·026 mm. broad), usually separated by one and a half to two diameters, though anteriorly they are slightly denser; and (2) fine punctures which are a third to half as coarse and are equally densely distributed; from each coarse puncture arises a fine, erect, brownish-testaceous hair which is about 0·10 mm. long, and from each fine puncture a similar hair which is about half as long and is usually recumbent. Clypeus with fronto-clypeal suture shallow, straight and 0·10 mm. long; anterior margin with middle feebly rounded and each side broadly, arcuately, and shallowly emarginate; anterior angles broadly rounded; surface sculptured like anterior part of head but slightly more finely. Labrum with anterior margin feebly rounded, nearly truncate, with angle on each side broadly rounded; surface sculptured like that of clypeus but with anterior middle portion glabrous and nearly impunctate. *Pronotum* across broadest point, which is at base, broader than long (2·18 mm. : 1·55 mm.), base broader than apex (2·18 mm. : 1·40 mm.). Sublateral sulcus present on basal fourth (0·375 mm. long). Lateral margins smooth. Surface sculptured like head but with coarse punctures very slightly coarser. *Elytra* more than three times as long as pronotum (5·2 mm. : 1·55 mm.) and broadest at apical two-fifths (2·74 mm.), slightly broader than broadest point across humeri. Lateral margins smooth. Apices broadly and conjointly rounded. Striae feebly impressed and absent at sides on apical two-fifths; strial punctures absent except on basal half in third to sixth striae where are a few shallow, round, indistinct punctures which are about 0·075 mm. broad and separated longitudinally by about two diameters. Intervals flat and sculptured as pronotum but with punctures slightly sparser and usually not as deep. *Scutellum* flat, broader than long (0·50 mm. : 0·35 mm.), base feebly, very broadly rounded, narrowed to and acutely rounded at apex; surface sculptured as adjacent elytral intervals but only with fine punctures. *Prosternum* with process long, acute but with extreme apex of process broadly rounded; near apex of process with a narrow median longitudinal line which is 0·075 mm. high and 0·20 mm. long. Surface of process with irregular to round, fine (about 0·012 mm. broad) punctures which are contiguous to separated by three diameters; pronotum anteriorly punctate like head; at sides, particularly basally, and on hypomera with fine punctures similar to those of head but much denser, here being frequently confluent, and with coarse punctures replaced by granules which are usually round, low, as dense and very slightly finer than punctures of head. Mesosternum triangularly, very broadly, and so deeply emarginate that apex of emargination is at least at surface formed by metasternum; surface sculptured like prosternal process. Metasternum with median longitudinal line feebly impressed basally where it is 0·05 mm. broad, anteriorly narrower, traceable to anterior fifth; disk feebly depressed at middle on posterior half; surface punctate like pronotum but more regularly, punctures usually separated by one to two diameters, and also with fine punctures similar to those of elytral disk; sides of metasternum with fine punctures denser and coarse punctures often replaced by granules similar to those of hypomera. Abdomen with apical margin of fifth sternite broadly, shallowly, arcuately emarginate; from apical margin to anterior two-thirds of fifth sternite is a low, feebly convex, median longitudinal line. Surface of sternites at middle punctate somewhat similarly to metasternal disk, and at sides sculptured as hypomera except for middle sides of first sternite which are slightly more densely punctate than anterior region of head and are without fine punctures. *Legs* with front trochanter with polished and feebly gibbous line which extends from basal third to apical fourth along middle of ventral side; front tibia with broad, smooth, moderately concave channel extending from middle of inner side

at apical two-fifths to inner lateral apex, and at apical fourth broadened where on inner side is a large, oval, moderately concave area which has on inner apical margin a dense tuft of long (0·25 mm.) erect hairs; front tarsus with the two basal segments dilated and on ventro-lateral margins with a dense fringe of long (0·25 mm.), erect hairs. Middle trochanter with posterior middle margin strongly gibbous and surface of gibbosity highly polished; tibia with inner apical fourth broadly but feebly concave, with surface of concavity polished and outer margin with a dense tuft of long (some are as long as 0·30 mm.), erect hairs; two basal segments of tarsus dilated and ventro-lateral margins with dense fringe of long hairs some of which, particularly those on outer side, are 0·40 mm. long. *Genitalia* with apex of the median lobe level with apices of lateral lobes; apex of median lobe on each side with acute anteriorly directed tooth which is about 0·175 mm. long.

Female: Externally similar to male except as follows: (1) process near apex only moderately gibbous but not carinate as it is in male; (2) middle ventral side of front trochanter is evenly convex; (3) entire front tibia is much more slender (at middle of its length its ratio to that of the male is 0·125 mm. : 0·200 mm.), without concavities on inner side, without a dense tuft of hairs, and not dilated at apical fourth; (4) two basal segments of front tarsus are not dilated nor with long fringe of erect hairs; (5) middle posterior margin of middle trochanter is not strongly gibbous; (6) entire middle tibia is much more slender (at middle of its length its breadth to that of the male—in specimens same size—is 0·14 mm. : 0·20 mm.) and inner apical fourth is not concave nor is there here a dense tuft of long, erect hairs; (7) two basal segments of middle tarsus are not dilated nor have they lateral fringes of long hairs; and (8) middle apical margin of the fifth abdominal sternite is obtusely angulate instead of emarginate.

Type: ♂. In my collection. French Guiana: St. Laurent du Maroni, x.1937 (*H. E. Hinton*).

Paratypes: 18, with same data as type.

Variations: In some specimens there are no distinct strial punctures on the elytra. In some females the median longitudinal gibbosity near the apex of the prosternal process is very nearly high enough and sharp enough to be called carinate. The median longitudinal line of the metasternal disk is usually not traceable beyond anterior fifth, though in some specimens it extends from anterior fifth to anterior margin as a very fine, smooth, non-impressed line.

All specimens were taken in small streams in rain forest. One was taken under water and the remainder by submerging sticks and leaves caught by various obstructions in the streams.

This species is named in honour of Dr. H. Bollow.

Helichus frater sp. n.

Male: Length, 8·0–8·5 mm.; breadth, 3·0–3·3 mm. Externally similar to male of *H. bollowi* sp. n. except as follows: (1) elytral striae are throughout deeper and strial punctures are nearly everywhere present, being present from base to apex in first two striae, whereas in *H. bollowi* they are completely absent in these first two striae; (2) the median longitudinal carina near apex of prosternal process is higher (in specimens of same size the height ratio is 0·100 mm. : 0·075 mm.) and surface of middle region of process is more coarsely punctate, the punctures being here a third coarser than those of head, seldom separated by as much as one diameter but often confluent, and between these are numerous microscopic punctures; (3) middle ventral side of front trochanter has polished and gibbous line moderately curved, whereas in *H. bollowi* it is straight; (4) posterior side of middle trochanter is evenly convex, whereas in *H. bollowi* it is strongly gibbous; and (5) apex of median lobe of genitalia without the spines seen in *H. bollowi*.

Female : Differs from male in exactly the same way as does female of *H. bollowi* from its male except that middle trochanters of both sexes of the new species are nearly similar.

Type : ♂. In my collection. FRENCH GUIANA : St. Laurent du Maroni, x.1937 (*H. E. Hinton*).

Paratypes : 4, with same data as the type.

Comparative notes : Both males and females may be distinguished from those of *H. bollowi* sp. n. by the presence of a complete row of strial punctures on first two discal elytral striae and by the more coarsely and densely punctate prosternal process. Both *H. bollowi* and *H. frater* differ from all other American species of the genus by having a very long sublateral sulcus on each side of pronotal base.

The examples of this species were collected in the same way and in the same locality as those of *H. bollowi.*

The internal anatomy of both these species will be described in a paper shortly to be published.

ELMIDAE.

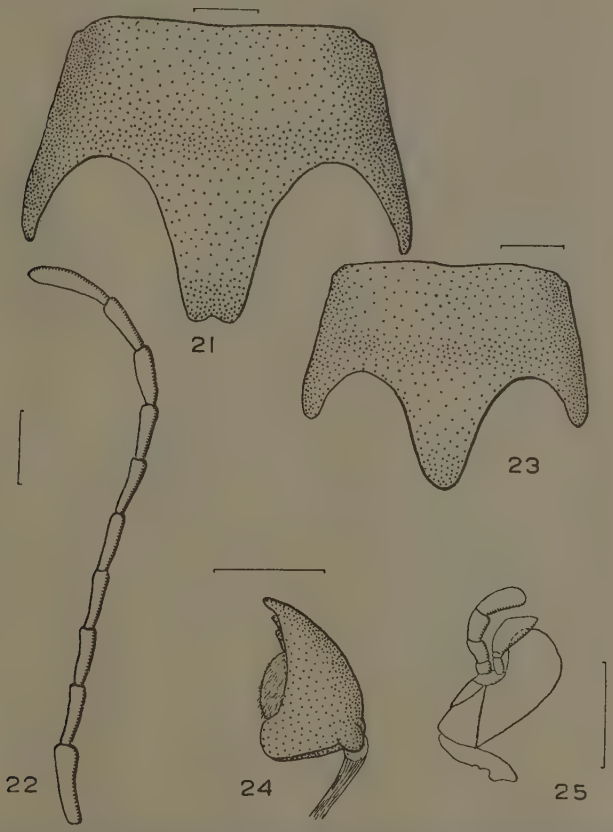
Stegoelmis gen. n.

Body elongate, subparallel. Most of dorsal and ventral surface with thin scale-like tomentum; inner apices of tibiae without a fringe of dense pubescence. *Head* when seen from below capable of being retracted so that none of the mouth-parts is visible. Antenna (fig. 22) 11-segmented. Mandible (fig. 24) with one acute apical tooth and two subacute subapical teeth; prostheca small, entirely membranous, and densely clothed with golden pubescence. Maxilla (fig. 25) with the palp 4-segmented, stipes with a well-developed palpifer; galea and lacinia separate and apex of each densely hairy or spinose. Labial palp 3-segmented and prementum with a palpiger. Mentum as broad but slightly longer than submentum. Gula anteriorly nearly as broad as submentum, with the sides nearly parallel. *Pronotum* with the basal margin trisinuate, broadly and deeply so on each side and more narrowly and shallowly so in front of scutellum; without sublateral carinae; with a shallow and broad median longitudinal impression. *Elytra* striate and punctate; without accessory striae; without sublateral carinae. Hind-wing (fig. 26) without a radial cross vein or an anal cell; with the apical portion of the first anal present; second anal with the first and third branches present and the second branch absent; third anal with a well-developed second branch; fourth anal well developed; cubito-anal cross vein complete and joining cubitus to first anal. *Prosternum* (figs. 21 and 23) moderately long in front of anterior coxae; process long, moderately narrow, and with the posterior margin rounded or emarginate. Mesosternum with a deep, moderately narrow groove for the reception of the prosternal process. *Legs* with the visible portion of the front coxae globular, the front trochantin completely concealed by the hypomera and sternum. Apices of tibiae without fringes of dense pubescence. Claws without teeth. *Alimentary canal* (fig. 33) with 11 or 14 caeca at the anterior margin of the mid-gut. Hind gut with six Malpighian tubules which end freely in the body cavity near the rectum. *Male reproductive system* (fig. 34) with six sperm tubes to each testis. Accessory glands lobed. Female reproductive system (fig. 32) with about 20 egg tubes to each ovary. Spermathecal duct opening into bursa copulatrix near middle or near base. *Central nervous system* (fig. 35) with three discrete thoracic ganglia; first abdominal ganglion fused to third thoracic; second to fifth discrete; and sixth to eighth fused together, though the limits of each are distinguishable.

Genotype : Stegoelmis geayi (Grouv.) (*Stenelmis*) (1908).

Of the known genera, *Stegoelmis* is probably most closely related to *Stenelmis* Duf., and like *Stenelmis* has no pubescence on the inner apices of the tibiae.

From *Stenelmis*, however, it differs in many important characters which may be summarised as follows: (1) the pronotum is without sublateral carinae; (2) there is no accessory stria at the base of each elytron between first and second striae; (3) the anterior margin of the mid-gut has 11 or 14 caeca, whereas in *Stenelmis* there is none here (Dufour, 1835); and (4) there are six sperm tubes to each testis, whereas in *Stenelmis* there are only three.



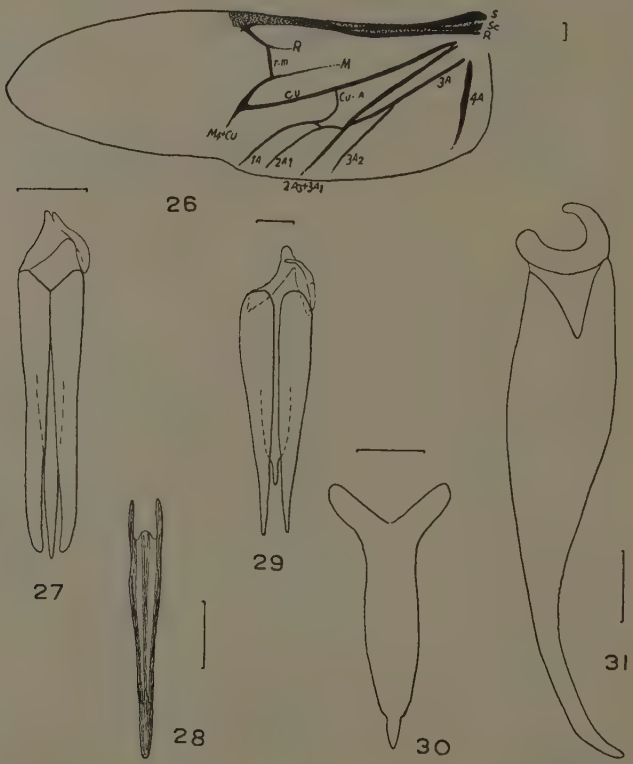
Figs. 21–25.—(21) Prosternum of *Stegoelmis geayi* (Grouv.). (22) Antenna of same. (23) Prosternum of *S. verrucata* sp. n. (24) Mandible of *S. geayi*. (25) Maxilla of *S. verrucata*.

Stegoelmis verrucata sp. n.

(figs. 23, 25, 27, 28, 36.)

Male: Length, 3·7 mm.; breadth, 1·02 mm. Cuticle feebly shining, rufo-piceous; antennae, mouth-parts and tarsi paler. *Head* with median longitudinal impression which is about 0·06 mm. broad and extends from near anterior margin to a point opposite posterior third of eyes; surface with round punctures which are slightly coarser than facets of eyes or about 0·020 mm. broad and are occasionally confluent but are usually separated by half

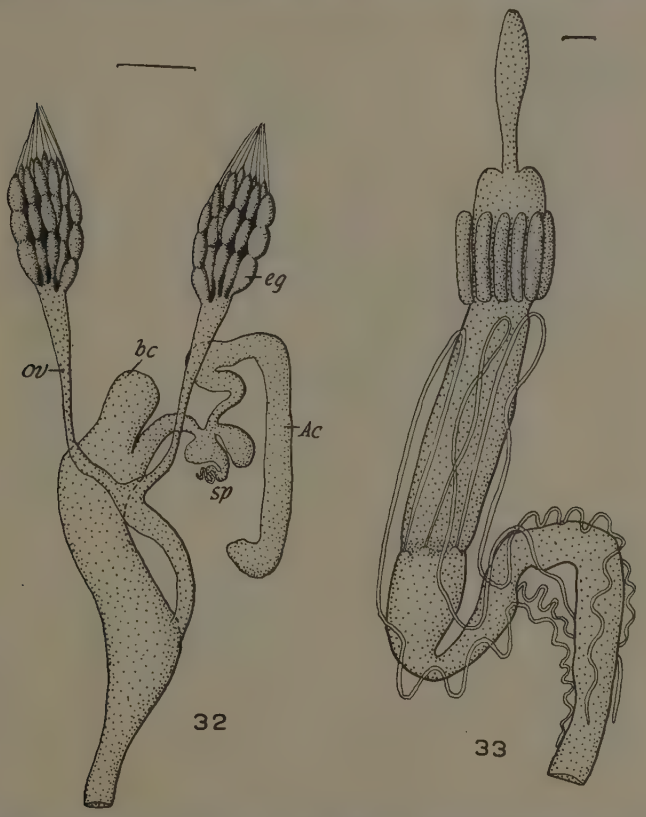
their diameter; surface between punctures densely, microscopically asperate. Clypeus with fronto-clypeal suture broad, moderately deep, and so formed that the anterior margin of head is arcuately emarginate for its entire breadth; anterior margin nearly truncate, with angle on each side broadly rounded; surface without distinct punctures but asperate somewhat similarly to head. Labrum with anterior margin feebly rounded, angle on each side broadly rounded; surface asperate like clypeus but less densely and slightly more



FIGS. 26–31.—(26) Hind-wing of *Stegoelmis geayi* (Grouv.). Venation after Forbes. (27) Dorsal view of male genitalia of *S. verrucata* sp. n. (28) Dorsal view of median lobe of same. (29) Dorsal view of male genitalia of *S. geayi*. (30) Dorsal view of median lobe of same. (31) Right lateral view of paramere of same.

finely; anterior third with narrow, complete, transverse row of dense, fine, long, golden hairs. *Pronotum* at broadest point, which is at basal half, broader than long (1·22 mm. : 1·18 mm.), base broader than apex (1·15 mm. : 0·70 mm.). Anterior margin at middle feebly, arcuately emarginate, the emarginate portion being 0·25 mm. broad. Median longitudinal impression shallow, about 0·12 mm. broad, extending from base to anterior fourth or fifth; on each side of median impression on basal two-fifths is a broad (0·20 mm.), moderately prominent gibbosity; slightly anterior to this on each side, near lateral margin, a more prominent gibbosity which is only about 0·11 mm. broad. Surface sculptured like head but

punctures very slightly coarser and occasionally separated, particularly near base of disk, by one diameter or a little more. *Elytra* more than twice as long as pronotum (2·7 mm. : 1·18 mm.). Apices broadly conjointly rounded. Humeri prominently gibbous; and also on each side near apical fourth at lateral margin with a more prominent, slightly smaller, somewhat acute tubercle or gibbosity. Striae everywhere deep; strial punctures on disk deep, usually round, a third to half as broad as intervals, separated longitudinally by one and a half to two diameters; towards sides punctures are slightly coarser and denser.



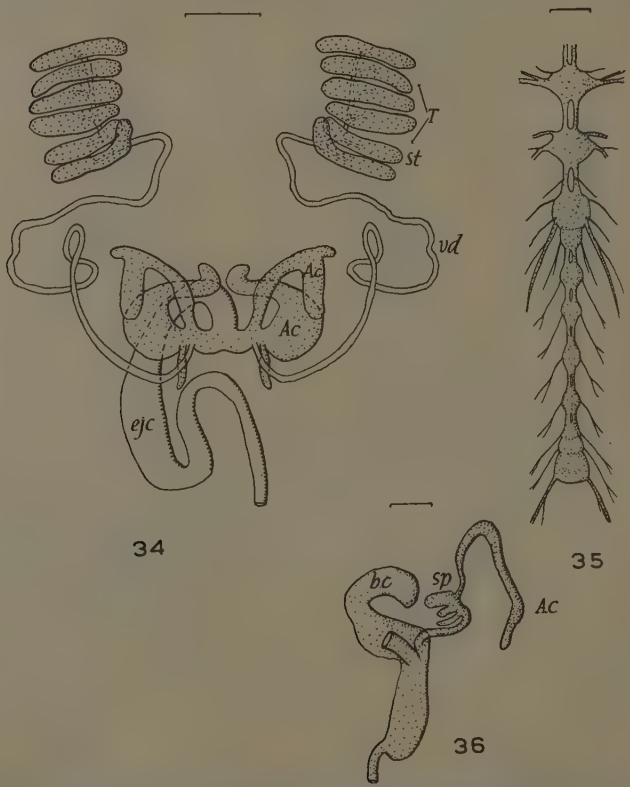
Figs. 32–33.—*Stegoelmis geayi* (Grouv.). (32) Female reproductive system. (33) Alimentary canal. (Ac) accessory gland; (eg) egg tube; (bc) bursa copulatrix; (ov) oviduct; (sp) spermatheca.

Intervals flat but with second and third feebly convex near base; surface asperate like pronotum, with only an occasional puncture which is as coarse as or slightly coarser than those of pronotum. *Scutellum* flat, subovate, longer than broad (0·27 mm. : 0·20 mm.); surface asperate like adjacent portions of elytra. *Prosternum* as in fig. 23, with surface sculptured like pronotum but slightly more coarsely; surface of process similarly sculptured, also coarsely rugose. Hypomera sculptured like prosternum. Mesosternum sculptured like prosternal process. Metasternum with median longitudinal line shallow, narrow, attaining anterior third; disk broadly and feebly depressed on posterior middle fourth; surface

sculptured like pronotum but punctures generally about 0·030 mm. broad; sides of metasternum similarly sculptured but punctures slightly coarser and very frequently confluent. Abdomen sculptured like metasternal disk. *Genitalia* as in figs. 27–28.

Female : Externally similar to male.

Type : ♂. In my collection. Brazil: State of Pará, Belem, 21–23.ix.1937 (*H. E. Hinton*).



Figs. 34–36.—(34) Male reproductive system of *Stegoelmis geayi* (Grouv.). (35) Central nervous system of same. (36) Female reproductive system of *S. verrucata* sp. n. (Ac) accessory gland; (bc) bursa copulatrix; (ejc) ejaculatory duct; (sp) spermatheca; (st) sperm tube; (T) testis; (vd) vas deferens.

Paratypes : 3, with same data as type; and 1, French Guiana: St. Laurent du Maroni, x.1937 (*H. E. Hinton*).

Comparative notes : This species may be distinguished from *S. geayi* (Grouv.) as follows: (1) the head of *S. geayi* is without a distinct median longitudinal impression; (2) the lateral gibbosity of the pronotum is more prominent than the median, whereas in *S. geayi* it is less prominent; (3) the humeri are much more strongly gibbous in the new species; (4) the elytral gibbosity at apical

fourth is acute, whereas in *S. geayi* the top is broadly rounded and the whole gibbosity is much less prominent; (5) the apices of the elytra are broadly rounded, whereas in *S. geayi* they are divergent and each is acute and slightly reflexed upwards; (6) the prosternum is differently shaped (*cf.* figs. 21 and 23); (7) the anterior margin of the mid-gut has 11 caeca, whereas in *S. geayi* it has 14 caeca; (8) the spermatheca has three lobes instead of two as in *S. geayi*; (9) the spermathecal duct opens into the base of the bursa copulatrix, whereas in *S. geayi* it opens into its middle.

The internal anatomy of two females of *S. verrucata* and two males and two females of *S. geayi* has been examined. This is the first known genus that has not a constant number of caeca at the anterior margin of the mid-gut.

Elsianus bicolor sp. n.

Male: Length, 4·7 mm.–5·5 mm.; breadth, 2·00 mm.–2·25 mm. Cuticle shining, black; elytra reddish-brown; antennae, mouth-parts, trochanters, and tarsi rufo-piceous. *Head* without distinct impressions; surface with round granules, slightly coarser than facets of eyes or about 0·023 mm. broad, usually separated by one to two diameters; surface between granules smooth and polished. Clypeus with fronto-clypeal suture well impressed and so shaped that anterior margin of head is feebly but broadly and arcuately emarginate; anterior margin moderately deeply and arcuately emarginate for its entire breadth, with angle on each side obtusely rounded; surface on basal half and sides sculptured like head but granules slightly finer, and at middle anterior half with round punctures which are similar in size and distribution to basal granules. Labrum with anterior margin very feebly, arcuately emarginate, with angle on each side broadly rounded; surface basally punctate like anterior middle region of clypeus but with punctures finer and denser; surface on anterior third almost impunctate. *Pronotum* across broadest point, which is at basal third, broader than long (1·65 mm. : 1·32 mm.), base broader than apex (1·55 mm. : 1·12 mm.). Sides broadly and shallowly sinuate at apical fifth, broadly but very shallowly sinuate before basal angles. Pronotum evenly convex, without a trace of sublateral carinae. Surface on middle of disk with punctures which are about 0·025 mm. broad, usually separated by one to one and a half diameters; sides on lateral fifth or sixth with punctures replaced by granules of similar size and density. *Elytra* about three times as long as pronotum (3·82 mm. : 1·32 mm.), with broadest point, which is at apical third, broader than broadest point across humeri (2·07 mm. : 1·85 mm.). Apices broadly and moderately strongly produced, conjointly broadly rounded. Humeri moderately gibbous. Surface very feebly striate; discal strial punctures irregular to round, shallow, about one-third to half as broad as intervals, and separated longitudinally by one to two diameters; towards sides these punctures become coarser and denser so that near lateral margins behind humeri they are about a third to twice as coarse and are frequently nearly as broad as intervals and separated longitudinally by one diameter. Intervals all flat; surface irregularly, moderately densely alutaceous; punctures about 0·020 mm. broad, separated by one to five diameters; at base and basal sides these punctures are frequently replaced by granules which are slightly coarser and denser. *Scutellum* flat, nearly round, as broad as long (0·25 mm.); surface sculptured like adjacent elytral intervals. Prosternum with apex of process broadly rounded; surface of process and middle basal region with punctures similar to those of discal pronotal region and also, particularly on process, feebly rugose; surface of prosternum elsewhere with feebly oblong granules, about 0·04 mm. long, separated usually by one diameter or less. Hypomera granulate like sides of prosternum. Mesosternum with groove for reception of prosternal process deep and broad, extending to posterior third; surface densely and coarsely rugose. Metasternum with median longitudinal line shallow, narrow, extending to anterior fifth; disk feebly and broadly depressed on middle

posterior half, with surface sculptured like pronotal disk; sides of metasternum granulate like sides of prosternum but with granules flatter and slightly broader. Abdomen with middle of first sternite not depressed, without carinae; all of middle of first two sternites and anterior half of middle of third non-tomentose, punctate like pronotal disk; middle of fourth and fifth sternites only feebly asperate on anterior fourth; surface of sternites elsewhere granulate somewhat like sides of metasternum. *Genitalia* with the parameres and median lobe evenly narrowed to apex; median lobe extending only very little beyond apex of paramere.

Female : Externally similar to male.

Type : ♂. In my collection. Bolivia: Yungas Valley, alt. 5000 to 9000 ft., vi.1937 (*H. E. Hinton*).

Paratypes : 11, with same data as type. Of these seven have the elytra as black as the pronotum, but in all other respects are similar to the bicoloured type.

Comparative notes : At the time of writing only two other species of *Elsianus* have been described which have no sublateral carinae on the pronotum. Both *E. pubescens* Grouv. and *E. aequalis* Hntn. are Brazilian forms. From the former the new species may be distinguished by the absence of granules on the pronotal disk, while from the latter it may be distinguished by the flat instead of strongly convex scutellum.

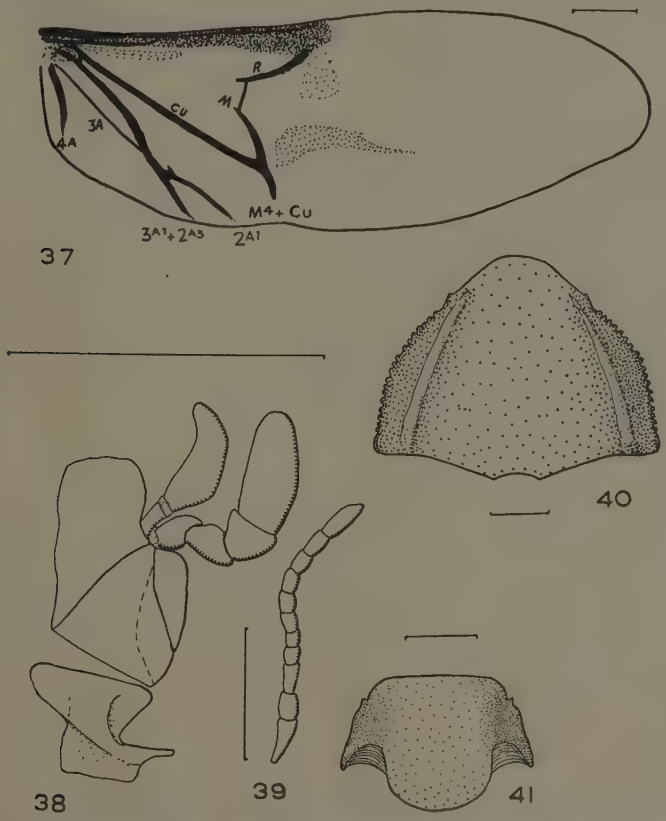
Oolimnius gen. n.

Body broadly oval. Hairy or scale-like tomentum confined to the following areas: (1) epipleura; (2) sides of prosternum, mesosternum, and metasternum; (3) nearly all of abdominal sternites; and (4) part of coxae, all of trochanters and femora, and inner apices of tibiae. *Head* when seen from below capable of being retracted so that none of the mouthparts is visible. Antenna (fig. 39) 11-segmented. Mandible with three apical blunt teeth; prostheca moderately large, entirely membranous, with a few apical hairs. Maxilla (fig. 38) with the palp 4-segmented and stipes with a well-developed palpifer; galea and lacinia separate, apex of each with spines or hairs. Labium with the palp 3-segmented and prementum with a palpiger. Mentum transverse, as broad but slightly longer than submentum. Gula anteriorly as broad as submentum, feebly narrowed posteriorly. *Pronotum* (fig. 40) with the anterior margin strongly arcuate at middle and on each side behind eye before apical angle deeply and very narrowly sinuate; posterior margin trisinuate, broadly and deeply so on each side and more narrowly and shallowly so in front of scutellum. Pronotum with a nearly complete sublateral carina on each side; disk evenly convex and without impressions. *Elytra* striate and punctate; each elytron with two sublateral carinae each of which is formed by a low row of close granules. Hind-wing (fig. 37) without a radial cross vein or an anal cell; first anal absent; second anal with the first and third branches present and the second branch absent; third anal joined to second anal and without a second branch; fourth anal well developed; and cubito-anal cross vein absent. *Prosternum* (fig. 41) moderately short in front of anterior coxae; prosternal process long and very broad and with posterior margin broadly rounded. Mesosternum with a deep and very broad groove for the reception of the prosternal process. Abdomen with the middle basal margin of the first sternite very broad and nearly truncate. *Legs* with the visible portion of the front coxae nearly round and trochantin completely concealed by the hypomera and sternum. Claws without teeth.

Genotype : Oolimnius salti sp. n.

This genus is most closely related to *Xenelmis* Hntn. but may be distinguished by the presence of a sublateral carina on each side of the pronotum and of the

first branch of the second anal in the hind-wing; in *Xenelmis* Hntn. the second anal has both first and second branches absent. From *Austrolimnius* C. & Z. the new genus may be distinguished by not having a longitudinal line of granules on the epipleura or an anal lobe on the hind-wing.



FIGS. 37–41.—*Oolimnius salti* sp. n. (37) Hind-wing. Venation after Forbes. (38) Outline of maxilla. (39) Antenna. (40) Pronotum. (41) Prosternum.

Oolimnius salti sp. n.

(figs. 37–41.)

Male : Length, 2·20 mm.; breadth, 1·32 mm. Cuticle strongly shining; elytra dark rufo-piceous; pronotum and most of ventral surface rufo-piceous but with strong aeneous lustre; antennae, mouth-parts, and legs brownish-testaceous to rufo-piceous. *Head* on each side with a carina which begins near inner margin of eye opposite posterior fourth of eye and extends posteriorly and slightly inwards to mid point between back of eye and posterior margin of head; head moderately convex near anterior margin between antennal bases; surface densely asperate, feebly rugose, with granules which are slightly finer than facets of eyes or about 0·014 mm. broad, separated by less than one to two diameters. Clypeus with fronto-clypeal suture at middle deep and nearly straight; anterior margin

feebly rounded for its entire breadth, with angle on each side broadly rounded; surface less densely asperate, particularly anteriorly, than head, with only a few obscure basal granules similar in size to those of head, but mostly with round punctures as dense as but slightly smaller than granules of head. Labrum with anterior margin nearly truncate, with angle on each side broadly rounded; surface nearly smooth, with only an occasional microscopic puncture. *Pronotum* (fig. 40) across broadest point, which is at base broader than long (1·05 mm. : 0·82 mm.), base broader than apex (1·05 mm. : 0·50 mm.). Sublateral carina on each side low, broad, extending from about basal sixth to about apical seventh. Lateral margins strongly and regularly crenate (fig. 40). Surface with round punctures, about 0·023 mm. broad, usually separated by half to one diameter; surface between punctures moderately densely and very minutely alutaceous. *Elytra* not twice as long as pronotum (1·50 mm. : 0·82 mm.), at broadest point, which is across apical third, broader than broadest point across humeri (1·32 mm. : 1·15 mm.). Lateral margins nearly smooth but occasionally interrupted by very minute granules. Apices broadly and feebly produced, conjointly broadly rounded. Humeri feebly gibbous. Striae nowhere more than feebly impressed; strial punctures on disk round, half to one-third as broad as intervals, separated longitudinally usually by one diameter. Intervals flat, moderately sparsely and irregularly alutaceous, with an occasional microscopic puncture. *Scutellum* flat, subovate, broader than long (0·17 mm. : 0·12 mm.); surface sculptured like that of adjacent parts of elytra. *Prosternum* as in fig. 41, with two large (0·09 mm. broad), nearly contiguous, oval pits on middle of prosternal process; elsewhere surface is similarly but slightly more obscurely and sparsely punctate than pronotum. Hypomera punctate like prosternum. Mesosternum obscurely punctate, densely minutely asperate or alutaceous. Metasternum with median longitudinal line extending slightly beyond anterior third; disk sculptured like pronotum but with punctures about 0·025 mm. broad or less, usually separated by half to one diameter; disk feebly convex on each side of middle; sides of metasternum with coarse punctures confined to anterior and posterior sides near middle and hind coxal cavities. Abdomen with middle of first sternite without carinae, not depressed; surface here punctate like that of metasternal disk; surface elsewhere tomentose like middle sides of metasternum, with only sparse, very fine, low granules showing through the tomentum. *Genitalia* with median lobe evenly narrowed to apex and extending slightly beyond apices of parameres.

Female : Externally similar to male.

Type : ♂. In my collection. Brazil: Nova Teutonia, iii.1936 (*F. Plaumann*).

Paratype : One female on a slide collected in the same locality as the type.

This species is named in honour of Dr. G. Salt.

Neoelmis prosternalis sp. n.

Male : Length, 3·2 mm.; breadth, 1·3 mm. Elongate, subparallel, moderately convex. Dorsal surface clothed with fine, brownish, recumbent hairs, 0·026 mm. to 0·050 mm. long, at bases separated from each other by about their own length or a little more; sides of prosternum with tomentum; non-tomentose areas of ventral surface similarly but more sparsely pubescent than dorsal surface. Cuticle shining, black to rufo-piceous; antennae, mouth-parts, and legs paler rufo-piceous. *Head* with middle of posterior frontal part with a round moderately shallow depression which is 0·105 mm. broad; surface with round punctures, about 0·01 mm. broad, frequently confluent, thus giving surface a rugose appearance, seldom separated by more than one diameter. Clypeus with anterior margin broadly, deeply, arcuately emarginate, with angle on each side broadly rounded; surface punctate like head but punctures usually separated by one to three diameters. Labrum with anterior margin truncate, angle on each side broadly rounded; surface punctate like clypeus; sides and anterior margin with a dense fringe of golden-testaceous hairs, about

0·07 mm. long. *Pronotum* at broadest point, which is at basal third, broader than long (1·07 mm. : 1·15 mm.), base broader than apex (0·95 mm. : 0·62 mm.). Sides arcuate but very slightly sinuate at basal fourth, apical third, and apical fifth. Near base on each side of scutellum is a shallow round depression which is about half as broad as scutellum. Surface with punctures usually slightly coarser than those of head, on anterior disk separated by one to three diameters, on middle discal region by two to four diameters, on basal discal region and at sides by three to six diameters. *Elytra* more than twice as long as pronotum (2·25 mm. : 1·15 mm.), at apical third much broader than across humeri (1·37 mm. : 1·12 mm.). Humeri narrow, not gibbous. Lateral margins nearly smooth. Intervals with third moderately strongly convex for short distance at base; other intervals flat or nearly so; surface with punctures sparser and slightly finer than those of basal region of pronotal disk. Striae feebly impressed; strial punctures on basal discal region round to subquadrate, deep, separated longitudinally from each other by one-half to one-third diameter, nearly as broad as intervals, towards sides somewhat coarser and denser, towards apex finer and sparser, so that on disk at apical fourth they are about one-fourth as coarse as basal ones and are separated from each other by three to four diameters. *Scutellum* strongly convex (much higher than adjacent elytral intervals), oval. *Ventral surface* on areas that are not tomentose punctate more finely and sparsely than pronotal disk at base. Prosternum with process moderately narrow and parallel between coxae; carinae diverging and extending to anterior third of prosternum; between carinae and sterno-notal suture strongly but evenly concave; anterior margin at middle with a tooth about 0·07 mm. long which projects vertically downwards and at base is as broad as long. Hypomera strongly shining, more sparsely punctate than basal discal pronotal region. Metasternum with median longitudinal line complete and deep; disk at side and against anterior margin with an oval impression, about 0·07 mm. broad, and nearer middle on posterior third with an oval depression about 0·10 mm. broad. Abdominal sternites with disk of first concave anteriorly, flat posteriorly, with lateral carinae converging slightly inwards, not extending beyond basal third; on each side at posterior sixth nearer to middle than lateral carina is a low tubercle about 0·05 mm. broad. Fifth sternite on each side near middle of apical margin moderately strongly elevated so that here the segment appears to be broadly and longitudinally channelled. *Legs* with a row of short and stout spines on inner apical three-fourths of middle tibiae. Apical segment of middle and hind tarsi with a median longitudinal ventral row of fine spines. *Genitalia* with median lobe extending beyond apices of lateral lobes, apex feebly spatulate.

Female : Externally similar to male except as follows : (1) anterior margin of prosternum without a tooth; (2) disk of metasternum not as deeply nor as extensively concave; (3) lateral carinae of first abdominal sternite absent; (4) disk of first abdominal sternite without tubercles; (5) middle tibiae without a row of short, stout, spines on apex; and (6) middle and hind tarsi without a row of spines on ventral side of apical segment.

Type : ♂. In my collection. Brazil : Santa Catharina, Nova Teutonia, 1936 (*F. Plaumann*).

Paratypes : 3 ♂♂, 1 ♀, with same data as above.

Variation : In one of the males the prosternal tooth is only about half as long as that of the type.

Comparative notes : This is the first species of this genus to be recorded from Brazil. It is so very unlike any other known species that to compare it to another would be misleading.

Neoelmis giga sp. n.

Male : Length, 3·3 mm.; breadth, 1·42 mm. This species is nearly identical in size, general proportions, and sculpturing to *N. prosternalis* sp. n. from which it differs as follows :

(1) head with round depression on posterior frontal region very shallow, scarcely noticeable; (2) scutellum only feebly convex; (3) tooth of prosternum broader, about 0·10 mm. broad, never more than half as long as broad, directed posteriorly rather than vertically downwards; (4) metasternum with anterior and posterior oval depressions similar but slightly deeper and the entire glabrous disk depressed so that a sharp margin is formed laterally with tomentose sides; (5) entire disk of first abdominal sternite concave, though on posterior fourth only feebly so; (6) lateral carina of first abdominal sternite extends posteriorly and converges towards middle to meet and become part of tubercle on posterior sixth; (7) genitalia with median lobe projecting beyond parameres and evenly narrowed to apex, not spatulate as in *N. prosternalis*; and (8) inner apex of the front tibia is longitudinally gibbous.

This species also has the ventral longitudinal row of fine spines on the apical segment of the middle and hind tarsi, and the row of short, stout, sparse spines on inner apical three-fourths of middle tibiae.

Female : Externally similar to male except as follows: (1) anterior margin of prosternum without tooth; (2) disk of metasternum less deeply and extensively concave; (3) lateral carinae of first abdominal sternite not converging towards middle line and extending to posterior margin; (4) disk of first abdominal sternite without tubercles; (5) front tibiae with inner apex not gibbous; (6) middle tibiae without a row of spines on inner apex; and (7) middle and hind tarsi without ventral row of spines on apical segment. The female differs from that of *N. prosternalis* in having the carinae of first abdominal sternite complete to posterior margin instead of absent.

Type : ♂. In my collection. Brazil: Santa Catharina, Nova Teutonia, 1936 (*F. Plaumann*).

Paratypes : 6 ♂♂, 3 ♀♀, with same data as above.

Neoelmis lobata sp. n.

Male : Length, 2·18 mm.; breadth, 0·89 mm. Elongate, subparallel, moderately convex. Dorsal surface with fine, brownish, recumbent hairs, about 0·04 mm. long, separated at their bases by distances equal to their own lengths; ventral surface with non-tomentose areas pubescent as on dorsal surface. Cuticle shining, black to rufo-piceous; antennae, mouth-parts and legs paler. *Head* without distinct impressions; surface with round punctures, about 0·008 mm. broad, usually separated by three to five diameters. Clypeus with anterior margin truncate, angle on each side broadly rounded; surface punctate like head. Labrum with anterior margin nearly truncate, angle on each side broadly rounded; surface at sides and near apical margin with a fringe of fine golden-testaceous hairs which are frequently erect and often 0·078 mm. long; surface with punctures slightly coarser and denser than those of head. *Pronotum* longer than broad (0·65 mm. : 0·57 mm.), base broader than apex (0·57 mm. : 0·37 mm.); sides feebly arcuate, feebly sinuate just before hind angles and again where apical transverse impression meets lateral margin. On base on each side in front of scutellum with a moderately deep oval depression which is about 0·06 mm. broad; on base adjacent to and on inner side of each carina with a similar but deeper and slightly broader depression. Surface with punctures similar to those of head but very slightly coarser and sparser. *Elytra* more than twice as long as pronotum (1·45 mm. : 0·65 mm.), at apical third distinctly broader than across base (0·89 mm. : 0·65 mm.). Humeri very feebly gibbous. Lateral margins nearly smooth. Intervals flat, with surface punctate like head but punctures usually separated by five to ten diameters. Striae absent on apical half or two-fifths; strial punctures on mid-discal region about two-thirds as large as scutellum, round to subquadrate, separated longitudinally by less than to slightly more than their diameters, slightly narrower to slightly broader than intervals; towards sides these punctures become slightly denser, towards

apex slightly finer but at about apical half they are suddenly reduced to about twice the size of punctures on intervals while on apical third they are absent or so small as not to be distinguished from usual punctures of intervals; row of large punctures nearest lateral margin continues almost to apex without noticeable reduction in size of punctures. *Scutellum* feebly convex and about as broad as long. *Prosternum* with process long, narrow, parallel between front coxae, with its margins thickened and slightly raised so that along middle a broad channel is formed; prosternal carinae converging anteriorly to meet just beyond anterior margin of coxal cavity and then continuing as a single carina to apical half of prosternum; prosternum concave on each side but with a slight ridge running on each side for a short distance parallel to sterno-notal suture; prosternum at middle before anterior margin with a large (about 0·131 mm. long) transverse gibbosity or lobe; anterior margin moderately strongly arcuate. Metasternum with median longitudinal line complete; posterior two-thirds of middle disk with a broad (about 0·131 mm.) almost parallel-sided depression which is nearly as deep as broad; disk on each side at posterior third with a moderately deep oval depression, about half as deep as median depression and two-fifths as broad. Abdominal sternites with first concave on anterior half and nearly flat on posterior third; first sternite with carina on each side diverging slightly outwards, only extending to apical three-fifths of segment. Fifth sternite with apical margin feebly and arcuately emarginate. *Legs* with inner apical three-fifths of middle and hind tibiae with a row of short, stout, erect, sparse spines.

Female : Externally similar to male except as follows : (1) metasternal discal depression not as deep nor as parallel-sided; and (2) middle and hind legs have on inner apex no row of short and stout spines.

Type : ♂. In my collection. Brazil: Santa Catharina, Nova Teutonia, 1936 (*F. Plaumann*).

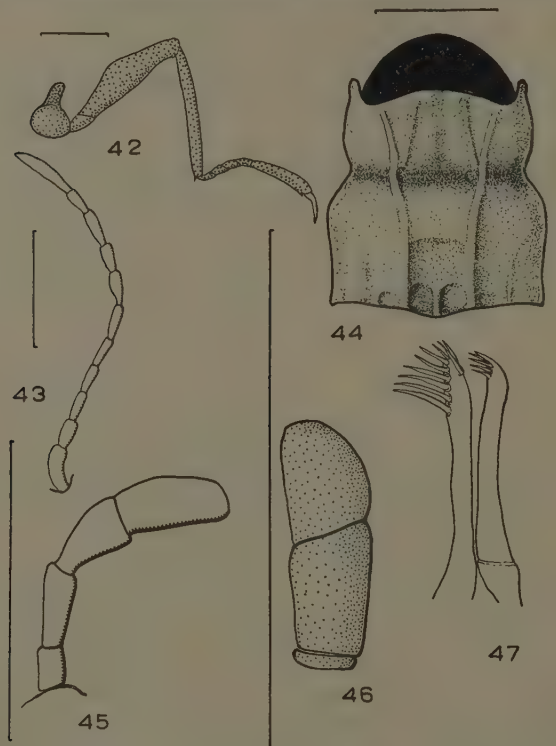
Paratypes : 1 ♂, 2 ♀♀, with same data as above.

Comparative notes : This is the only species so far described which has the prosternal carinae converging and meeting anteriorly. Also, no other species has a large transverse gibbosity just before middle of the anterior prosternal margin.

Neolimnius gen. n.

Body elongate, subparallel. Hairy tomentum absent; if scale-like tomentum is present it has been rubbed off in my specimens ; dorsal and ventral surface with a few sparse and fine hairs. *Head* when seen from below capable of being retracted so that none of the mouth-parts is visible. Antenna (fig. 43) 11-segmented. Mandible with three very feebly developed apical teeth; prostheca large and entirely membranous. Maxillary palp (fig. 45) 4-segmented and stipes with a palpifer; galea and lacinia (fig. 47) separate, each very long and narrow, with a few spines at apex. Labial palp (fig. 46) 3-segmented and prementum with a palpiger; mentum nearly U-shaped and at middle, where it is longest, two-thirds as long as submentum; submentum with the anterior margin narrower than mentum but broadening out posteriorly so that near gula it is as broad as the anterior margin of the mentum. Gula anteriorly as broad as submentum but becoming broader posteriorly so that at posterior margin it is at least a third broader than posterior margin of submentum. *Pronotum* (fig. 44) with a deep and complete transverse impression on apical two-fifths; with a nearly complete longitudinal carina on each side of middle; with a sublateral carina on each side on basal fourth; anterior margin broadly arcuate at middle and deeply and broadly sinuate on each side behind eye before apical angle; basal margin broadly and shallowly sinuate on each side and rounded, not emarginate, in front of scutellum. *Elytra* striate and punctate; without basal accessory striae; each elytron with two sublateral longitudinal carinae, one on third and the other on fifth interval. Hind-wing (fig. 48) with a well-developed anal lobe; without a radial cross vein or an anal cell;

first anal absent; second anal unbranched but well developed; third anal rather indistinct and present only basally; fourth anal short but well developed; and cubito-anal cross vein absent. *Prosternum* (fig. 49) very long in front of anterior coxae; process moderately short and narrow, with the apical margin rounded. Mesosternum with a deep, broad groove for the reception of the prosternal process. *Legs* with the visible portion of the front coxae globular and trochantin completely concealed by the hypomera and sternum. Claws (fig. 42) without teeth. *Alimentary canal* (fig. 51) without caeca at the anterior margin of the mid-gut. Hind gut with six Malpighian tubules which end freely in the body cavity



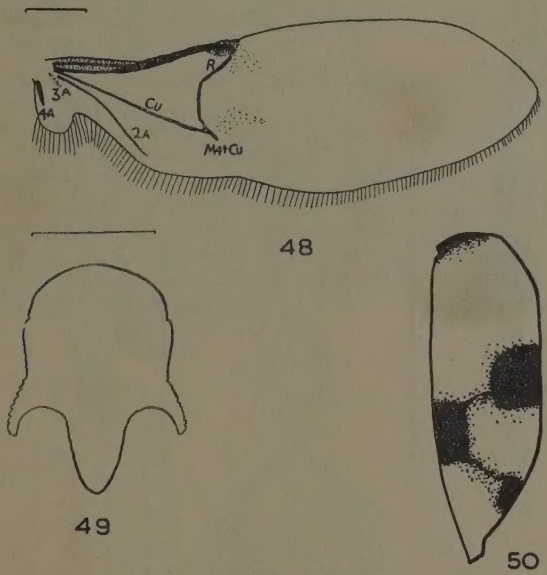
Figs. 42–47.—*Neolimnius palpalis* sp. n. (42) Front leg. (43) Antenna. (44) Pronotum. (45) Maxillary palp. (46) Labial palp. (47) Lacinia and galea. The spines are approximately correctly placed.

near the rectum. *Male reproductive system* with two sperm tubes to each testis. Proximal end (ectodermal part) of vas deferens very much swollen to serve as vesicula seminalis. Female reproductive system (fig. 53) with three egg tubes to each ovary. Spermathecal duct opening into apex of bursa copulatrix. *Central nervous system* (fig. 52) with three discrete thoracic ganglia; with the first abdominal ganglion fused to the third thoracic; second and third discrete; and fourth to eighth fused together.

Genotype : Neolimnius palpalis sp. n.

The maxillae of all other genera known to me have the lacinia and galea

rather short and broad, whereas in the new genus they are unique in being very long, narrow, and nearly parallel-sided. The form of the impressions and carinae of the pronotum (fig. 44) can be compared to no other known genus. The base of the pronotum is rounded instead of emarginate in front of the scutellum—a character in which it resembles such genera as *Tolriolus* Hntn. The hind-wings have a very well-developed anal lobe, the first anal is absent, the second anal is unbranched, and the third anal is present only basally—all characters in which it resembles the genus *Austrolimnius* C. & Z., a genus also similar in the structure of the central nervous system. The extreme concentration of the abdominal ganglia is unexpected, for it is usual to find this degree of fusion only in broadly oval or nearly round forms. The anterior margin



FIGS. 48–50.—*Neolimnius palpalis* sp. n. (48) Hind-wing. Venation after Forbes. (49) Prosternum. (50) Elytra to show maculation. Black is black and white is brownish-testaceous.

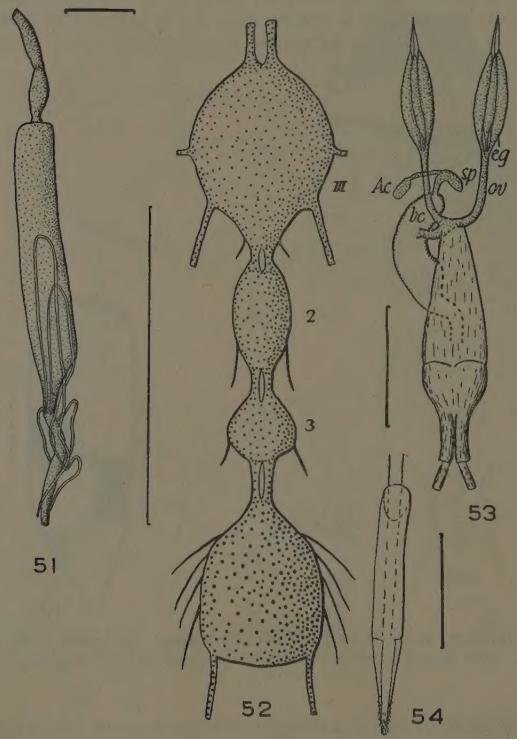
of the mid-gut is without caeca, a character the new genus has in common with *Xenelmis* Hntn., *Stenelmis* Duf., etc. There are two sperm tubes to each testis, as is the case with most genera of the family. Each ovary has three egg tubes, while in all other genera known to have only two sperm tubes the number of egg tubes is always more than three. *Austrolimnius* C. & Z. with only one sperm tube has only two egg tubes.

Neolimnius palpalis sp. n.

(figs. 42–54.)

Male: Length, 1·25 mm.; breadth, 0·50 mm. Cuticle moderately shining, brownish-testaceous; elytra (fig. 50) with black markings as figured; basal half of pronotum and a broad patch around each eye black. *Head* with surface densely, microscopically alutaceous,

also with numerous indistinct rugosities. Clypeus with fronto-clypeal suture nearly straight, very indistinct; anterior margin nearly truncate, angle on each side broadly rounded; surface sculptured like head. Labrum with anterior margin feebly rounded, angle on each side broadly rounded; surface not rugose nor alutaceous but with minute (0·002 mm. broad) punctures which are usually separated by one diameter. *Pronotum* with shape and gross sculpture as in fig. 44. Surface densely asperate throughout. *Elytra* more than twice as long as pronotum (0·80 mm. : 0·35 mm.), at broadest point, which is at apical third, slightly broader than greatest width across humeri (0·50 mm. : 0·47 mm.).



Figs. 51–54.—*Neolimnius palpalis* sp. n. (51) Alimentary canal. The length of the Malpighian tubules is only approximate. (52) Central nervous system. (53) Female reproductive system. (54) Male genitalia from dorsal view. (Ac) Accessory gland; (bc) bursa copulatrix; (eg) egg tube; (ov) oviduct; (sp) spermatheca.

Lateral margins nearly smooth. Humeri feebly gibbous. Apices moderately broadly, strongly produced, and conjointly broadly rounded. Striae well impressed throughout; discal strial punctures usually subquadrate to transversely rectangular, deep, as broad to one-third broader than intervals, and separated longitudinally usually by slightly less than their diameter; towards sides these punctures become a little coarser and denser and towards apex shallower, finer, and sparser. Intervals with second strongly convex on basal fourth or fifth, sutural flat, fourth feebly convex near humeri; inner sublateral carina (on third interval) extending to apical sixth, while outer sublateral carina (on fifth interval) extends

very nearly as far; surface of intervals densely alutaceous or asperate, nowhere distinctly punctate. *Prosternum* with shape as in fig. 49; prosternal carinae present on basal two-fifths, parallel, separated by a distance equal to breadth of process at base; surface densely and microscopically asperate, at sides with round punctures about 0·008 mm. broad, nearly as coarse as facets of eyes, separated usually by less than their diameter. Hypomera punctate like sides of prosternum. Mesosternum with surface asperate. Metasternum with median longitudinal line broad (0·075 mm.) and deep on posterior half, absent anteriorly; disk nearly flat; surface of disk coarsely and confluently punctate, appearing coarsely rugose; sides of metasternum at middle with surface only densely asperate. Abdomen with middle of first sternite feebly depressed, without carinae, sides with coarse punctures like metasternal disk; second sternite with anterior row of dense, coarse (0·025 mm.) punctures which nearly extends to sides; sternites elsewhere with minute (0·004 mm. broad) punctures, separated usually by one diameter or less. *Genitalia* as in fig. 54.

Female : Externally similar to male.

Type : ♂. In my collection. Brazil: State of Pará, Manaos, ix.1937 (*H. E. Hinton*).

Paratypes : 4, with same data as the type. 105, French Guiana: St. Laurent du Maroni, x.1937 (*H. E. Hinton*).

The specimens from St. Laurent are generally slightly larger (0·05 mm. longer and 0·025 mm. broader) than those from Manaos and have the second elytral interval so strongly convex that it may be called carinate.

All specimens were collected in small fast streams of clear water. They seemed to prefer burnt logs and sticks on which their colour rendered them very conspicuous in spite of their small size.